IN THE CLAIMS:

Please amend the claims as follows:

1. (Original) A method of monitoring and analyzing flow in a sewer system, comprising the steps of:

collecting, using a monitoring assembly, data representative of actual flow volume in a first location;

storing the data representative of actual flow volume in a memory;

maintaining, in the memory, previously stored data representative of previous flow volumes;

determining a predicted flow volume, wherein the predicted flow volume is dependent upon data selected from the previously stored data and a day and time, wherein the day and time each correspond to both the data selected from the previously stored data and the data representative of actual flow volume; and

comparing the actual flow volume with the predicted flow volume to yield a difference value.

2. (Original) The method of claim 1, wherein the difference value exceeds a predetermined variance value, and the method further comprises the step of issuing a flow loss notification.

3. (Original) The method of claim 2, wherein the method further comprises the step of communicating the flow loss notification by at least one of a cellular telephone means, a land line telephone means, a pager, an electronic mail means, and an Internet means.

4. (Original) The method of claim 1, wherein the difference value is equal to or less than a predetermined variance value, and the method further comprises storing the actual flow volume in the memory as stored calibration data.

5. (Original) The method of claim 1, wherein the step of collecting data representative of actual flow volume includes the steps of:

collecting data representative of flow velocity and data representative of depth; and

calculating the data representative of actual flow volume using the data representative of flow velocity and the data representative of depth, and

the method further comprising the step of transmitting at least one of the data representative of flow velocity, data representative of depth, and data representative of actual flow volume over a data network to a computing device.

6. (Original) The method of claim 1, wherein the data representative of actual flow volume includes data representative of a rolling average flow volume.

7. (Original) The method of claim 1, wherein the data representative of actual flow volume includes at least one of flow velocity data and depth data.

8. (Original) The method of claim 1, wherein at least one of the determining step and the comparing step is performed by the monitoring assembly.

9. (Original) The method of claim 1, wherein at least one of the determining step and the comparing step is performed by a computing device.

10. (Original) The method of claim 1, wherein the step of collecting data representative of actual flow volume includes the steps of:

collecting data representative of flow velocity of a fluid substance and data representative of depth of a fluid substance; and

calculating the data representative of actual flow volume using the data representative of flow velocity and the data representative of depth, and

the method further comprising the step of validating the data representative of flow velocity and the data representative of depth.

11. (Original) The method of claim 10, wherein the validating step is performed by the monitoring assembly.

12. (Original) The method of claim 1, wherein the predicted flow volume is further dependent upon additional data selected from the previously stored data, the additional data corresponding to a rain event.

13. (Original) A flow monitoring system, comprising:

a first monitoring assembly having at least one sensor, wherein the at least one sensor is operative to detect data representative of actual flow volume of a fluid substance at a first location;

a processor in communication with the first monitoring assembly;

a memory, wherein the memory is operative to store the data representative of actual flow volume and a detection time associated with said data; and

a central computing device in communication with the first monitoring assembly,

wherein the processor is trained to compare the actual flow volume with a predicted flow volume to yield a difference value, the predicted flow volume being dependent upon the data stored in the memory and the detection time associated with said data.

14. (Original) The system of claim 13, wherein the processor is further trained to issue a notification if the difference value exceeds a predetermined variance amount.

15. (Original) The system of claim 13, wherein the data representative of actual flow volume comprises at least one of velocity data and depth data, and wherein the processor is further trained to calculate an actual flow volume corresponding to the at least one of velocity data and depth data.

16. (Original) The system of claim 13, further comprising an alarm device, the alarm device being integral with the processor, and the alarm device being configured to selectively issue an alarm based on the difference value.

17. (Original) The system of claim 16, wherein a current threshold value is computed on the basis of the predicted flow volume and the actual flow volume, the current threshold value being updated periodically, and wherein the alarm device is configured to issue an alarm when the actual flow volume is less than the current threshold value.

18. (Original) The system of claim 17, wherein when an alarm is issued by the alarm device, the first monitoring assembly is configured to communicate the alarm.

19. (Original) The system of claim 18, wherein the first monitoring system is configured to communicate the alarm via at least one of a cellular telephone means, a land line telephone means, a pager, an electronic mail means, and an Internet means.

20. (Original) The system of claim 13, wherein the processor is integral with the first monitoring assembly.

21. (Original) The system of claim 13, wherein the processor is integral with the central computing device.

22. (Original) The system of claim 13, wherein the first monitoring assembly is further operative to detect data representative of flow velocity and depth, and to validate the data representative of flow velocity and depth.

23. (Original) The system of claim 13, further comprising a means for detecting a quantity of rain at a location during a period of time.

24. (Original) The system of claim 23, wherein the means for detecting a quantity of rain includes at least one of a rain gauge, a weather service, and a weather web site.

25. (Original) The system of claim 13, wherein the central computing device is trained to predict at least one of an anticipated flow velocity, an anticipated depth, and an anticipated flow volume of the fluid substance at a second location.

26. (Original) An apparatus for monitoring and analyzing flow of a fluid substance in a sewer system, the apparatus comprising:

a first means for monitoring fluid flow having at least one means for sensing, wherein the at least one means for sensing is operative to detect data representative of actual flow volume at a first location;

a means for processing in communication with the first means for monitoring;

a means for storing data, wherein the means for storing data is operative to store the data representative of actual flow volume and a detection time associated with said data; and

a means for computing in communication with the first means for monitoring,

wherein the means for processing is trained to compare the actual flow volume with a predicted flow volume to yield a difference value, the predicted flow volume being dependent upon the data stored in the means for storing data and the detection time associated with said data.

27. (Original) The apparatus of claim 26, wherein the means for processing is further trained to issue a notification if the difference value exceeds a predetermined variance amount.

28. (Original) The apparatus of claim 26, wherein the data representative of actual flow volume comprises at least one of velocity data and depth data, and wherein the means for processing is further trained to calculate an actual flow volume corresponding to the at least one of velocity data and depth data.

29. (Original) The apparatus of claim 26, further comprising a means for alarming, the means for alarming being integral with the means for processing, and the means for alarming being configured to selectively issue an alarm based on the difference value.

30. (Original) The apparatus of claim 29, wherein the means for processing is further trained to compute a current threshold value on the basis of the predicted flow volume and the actual flow volume and to periodically update the current threshold value, and wherein the means

for alarming is configured to issue an alarm when the actual flow volume is less than the current threshold value.

31. (Original) The apparatus of claim 30, wherein when an alarm is issued by the means for alarming, the first means for monitoring is configured to communicate the alarm.

32. (Original) The apparatus of claim 31, wherein the first means for monitoring is configured to communicate the alarm via at least one of a cellular telephone means, a land line telephone means, a pager, an electronic mail means, and an Internet means.

33. (Original) The apparatus of claim 26, wherein the means for processing is integral with the first means for monitoring.

34. (Original) The apparatus of claim 26, wherein the means for processing is integral with the means for computing.

35. (Original) The apparatus of claim 26, wherein the first means for monitoring is further operative to detect data representative of flow velocity and depth, and to validate the data representative of flow velocity and depth.

36. (Original) The apparatus of claim 26, further comprising a means for detecting a quantity of rain at a location during a period of time.

37. (Original) The apparatus of claim 36, wherein the means for detecting a quantity of rain includes at least one of a rain gauge, a weather service, and a weather web site.

38. (Original) The apparatus of claim 26, wherein the mean for computing is trained to predict at least one of an anticipated flow velocity, an anticipated depth, and an anticipated flow volume of the fluid substance at a second location.

39. (Currently Amended) A storage medium for storing computer-readable software, the storage medium storing software for monitoring and analyzing flow in a sewer system,

the sewer system including a monitoring assembly, and the monitoring assembly including at least one sensor configured to detect data representative of actual flow volume in a first location, ~~the software being computer-readable,~~ wherein the software includes instructions for causing a first computer to:

store the data representative of actual flow volume in a memory;

maintain, in the memory, previously stored data representative of previous flow volumes;

determine a predicted flow volume, wherein the predicted flow volume is dependent upon data selected from the previously stored data and a day and time, wherein the day and time each correspond to both the data selected from the previously stored data and the data representative of actual flow volume; and

compare the actual flow volume with the predicted flow volume to yield a difference value.

40. (Original) The storage medium of claim 39, wherein the difference value exceeds a predetermined variance value, and the software further includes instructions for causing the first computer to issue a flow loss notification.

41. (Original) The storage medium of claim 40, wherein the software further includes instructions for causing the first computer to communicate the flow loss notification by at least one of a cellular telephone means, a land line telephone means, a pager, an electronic mail means, and an Internet means.

42. (Original) The storage medium of claim 39, wherein the difference value is equal to or less than a predetermined variance value, and the software further includes instructions for causing the first computer to store the actual flow volume in the memory as stored calibration data.

43. (Original) The storage medium of claim 39, wherein the at least one sensor configured to detect data representative of actual flow volume in a first location includes at least one sensor configured to detect data representative of flow velocity and data representative of depth, and the software further includes instructions for causing the first computer to:

calculate the data representative of actual flow volume using the data representative of flow velocity and the data representative of depth; and

transmit at least one of the data representative of flow velocity, data representative of depth, and data representative of actual flow volume over a data network to a second computer.

44. (Original) The storage medium of claim 39, wherein the data representative of actual flow volume includes data representative of rolling average flow volume.

45. (Original) The storage medium of claim 39, wherein the data representative of actual flow volume includes at least one of flow velocity data and depth data.

46. (Original) The storage medium of claim 39, wherein at least one sensor configured to detect data representative of actual flow volume in a first location includes at least one sensor configured to detect data representative of flow velocity and data representative of depth, and the software further includes instructions for causing the first computer to:

calculate the data representative of actual flow volume using the data representative of flow velocity and the data representative of depth; and

validate the data representative of flow velocity and the data representative of depth.

47. (Original) The storage medium of claim 39, wherein the predicted flow volume is further dependent upon additional data selected from the previously stored data, the additional data corresponding to a rain event.